

WHAT IS CLAIMED IS:

1. A light-emitting material including diplophase compound that is expressed in the following general formula:

$(\text{Sr}, \text{Eu}, \text{Dy})_{0.95 \pm x} (\text{Al}, \text{B})_2 \text{O}_{3.95 \pm x} (\text{Sr}, \text{Eu}, \text{Dy})_{4-x} (\text{Al}, \text{B})_{14} \text{O}_{25-x}$
(in the formula, $x=0.01$ to 0.1 , a content of B element is 0.2 to 1.0 % by weight, a content of Eu is 0.5 to 3.0 % by weight and a content of Dy is 0.1 to 3.0 % by weight).

2. A light-emitting material according to claim 1, wherein said diplophase compound comprises symbiotical phase $(\text{Sr}, \text{Eu}, \text{Dy})_{0.95 \pm x} (\text{Al}, \text{B})_2 \text{O}_{3.95 \pm x}$ from $(\text{Sr}, \text{Eu}, \text{Dy})_{4-x} (\text{Al}, \text{B})_{14} \text{O}_{25-x}$.

3. A light-emitting material according to claim 1, wherein Al-O tetrahedron and Al-O octahedron concurrently exist in said diplophase compound.

4. A light-emitting material according to claim 1, wherein BO_3 triangular arrangement substitute a part of Al-O octahedron in said diplophase compound.

5. A light-emitting material according to claim 1, wherein boron exists entirely in said diplophase compound crystalline.

6. A producing method of a light-emitting material of claim 1, comprising

- (1) step for measuring previously pulverized raw materials, and mixing them to obtain a mixture of raw material,
- (2) step for putting the mixture into a container, heating the mixture from 850°C to 1200°C for three hours under a reduction condition, keeping the temperature for five to six hours, thereby obtaining a sintered body,
- (3) step for stopping the heating operation and cooling the sintered body nature down to a room temperature, and
- (4) step for pulverizing the sintered body to obtain a product.

7. A producing method of a light-emitting material according to claim 6, wherein said previously pulverized raw materials are SrCO_3 , Al_2O_3 , H_3BO_3 , Eu_2O_3 and Dy_2O_3 .

8. A producing method of a light-emitting material according to claim 6 or 7, wherein in said step (2), reduction is carried out using carbon powder.

add
Al }

add
B }